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Case Report

FIREARM INJURY CAUSING ISOLATED GALLBLADDER PERFORATION; A RARE INJURY

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ABSTRACT
Isolated injury to the gall bladder is rare. We report a case of an 18- year-old boy who presented with a firearm injury to the abdomen during a marriage ceremony. The patient, who was in a state of shock, underwent ultrasonography (USG) and radiography of the abdomen. USG revealed free fluid in the abdomen. Exploration revealed isolated gallbladder perforations for which cholecystectomy were done. Injury to the gall bladder is usually evident by direct inspection of the organ. There should never be an attempt to primarily repair a gall bladder injury, even if it is a relatively small injury.

Keywords: *Isolated Gallbladder Perforation; Cholecystectomy; Firearm; Rare Injury*

INTRODUCTION
In the US, penetrating injuries comprise approximately 6% and 10% of hospitalizations and emergency room visits, respectively. However, they account for the second most common mechanism of fatal injury after motor vehicle related injuries, at 20% of all injury-related deaths. The absolute numbers vary across global locations but the epidemiological fact remains unchanged - that penetrating injuries in particular, firearm related injury, are highly lethal.

CASES
An 18-year-old boy presented to the trauma unit of our hospital with an alleged history of a firearm injury to the abdomen during a marriage ceremony. He presented about 18 hrs post injury with two wounds in upper abdomen along with pain all over abdomen. On examination, the boy had cold clammy skin, thready pulse, tachycardia (pulse rate 120/min) and hypovolemia (blood pressure -90/54 mmHg). The abdomen was rigid and tender. Two wounds were present, one in right hypochondrium and other in left hypochondrium. Ultrasonography revealed free fluid in the abdomen. Radiography didn't reveal any abnormality. After resuscitation, the patient underwent urgent exploratory laparotomy. The peritoneal cavity contained about 500 ml of billiary fluid. The gallbladder had two perforations along the fundus. The rest of the extrahepatic billiary tree was normal. No other injury was detected. Lesser sac exploration did not reveal any injury in the posterior wall of stomach or in the pancreas. Drainage of peritoneal cavity along with cholecystectomy was done. The entry wound was debrided. The patient had an uneventful postoperative course.

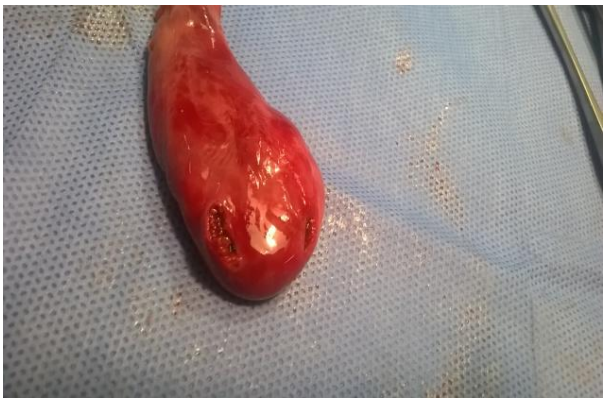

Figure 1: Specimen showing gallbldder perforation

Case Report

Figure 2: Entry wound

Figure 3: Exit wound

Figure 4: Entry wound, liver and gall bladder perforation

DISCUSSION

Gunshot wounds unlike stab wounds are associated with a higher likelihood of intra-abdominal injury that requires repair, up to 90% of patients as reported by some trauma centers (McCarthy *et al.*, 1991). Therefore, gunshot wounds are more likely to be taken directly to the operating room, especially in centers where the frequency of gunshot wounds is less common (Moore *et al.*, 1980). The penetrating abdominal injury due to firearm causes both the external wound and the internal perforations having irregular contused margins.

Multi organ visceral injury is frequent with such penetrating wounds. Though hollow visceral injury is often diagnosed preoperatively, injury to gall bladder can rarely be diagnosed preoperatively. Billiary injury should be suspected in presence of free bile in the peritoneal cavity or with staining of the hepatoduodenal ligament or retroperitoneum. Gall bladder injury is diagnosed mainly at laparotomy and any perforation, avulsion or devascularization (second to a portal triad or hepatic artery injury) should be treated with cholecystectomy. Injury to the gall bladder is usually evident by direct inspection of the organ. There should never be an attempt to primarily repair a gall bladder injury, even if it is a relatively small injury. Isolated injury to the gall bladder is rare. The liver is the most common organ associated with gall bladder injuries followed by duodenum, stomach, colon and pancreas. The risk of bile leakage from a repaired gall bladder and absence of any known benefit from preservation of the organ validates cholecystectomy as the management of choice for gall bladder perforations. Since the gall bladder may be required to repair associated ductal injuries, cholecystectomy is mandated only after excluding such injuries (Parks and Diamond, 1995).

Conclusion

A detailed history, examination and a high index of suspicion would facilitate the diagnosis and management of such patients with firearm injuries. Regulatory steps need to be taken to prevent the misuse of firearms in marriage and parties, which may have potentially fatal consequences.

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